



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/790,844

03/03/2004

Mathias Rollwage

R.304240

2494

7590

04/06/2006

RONALD E. GREIGG
GREIGG & GREIGG P.L.L.C.
1423 Powhatan Street, Suite One
Alexandria, VA 22314

EXAMINER

SHAH, SAMIR M

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/790,844

Applicant(s)

ROLLWAGE ET AL.

Examiner

Samir M. Shah

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3, 4 and 8 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-7, 9-11, 14-16 and 18 is/are rejected.
- 7) ☒ Claim(s) 12, 13, 17, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 8, filed on January 20, 2006, with respect to drawings, claims 1-9 (112, 2nd) and claims 3, 4 and 8 have been fully considered and are persuasive. The 112 (2nd) rejection of claims 1-9 and the objection of claims 3, 4 and 8 have been withdrawn.
2. Applicant's arguments with respect to claims 1, 5-7, 9 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

3. The drawings were received on 1/20/2006. These drawings are acceptable.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Device for measuring the level of a fluid in a fuel tank of a motor vehicle.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claims 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Boscolo (US Patent 4,675,660 henceforth "Boscolo").

As to claim 10, Boscolo discloses in a patent titled "Container liquid level sensing utilizing a filling tube" a container (10); a sound guide conduit/filler tube (12)/cardboard

tube (11) disposed in the container (column 4, lines 6-9); a fluid feeding device/filler tube (12) in the container (figures 1 and 4); and at least one ultrasonic/transmitter (15)/receiver (16) transducer disposed near one end of the sound guide conduit/filler tube (12)/cardboard tube (11) for generating ultrasonic pulses and for receiving the ultrasonic pulses reflected in the region of the surface of the fluid in the container (10) (column 2, lines 5-12, lines 24-28); the improvement wherein the ultrasonic transducer/transmitter transducer (15) is disposed in the container (10) on an outer circumference of the fluid feeding device/filler tube (12) in the container (figures 1, 4).

As to claim 11, Boscolo discloses the ultrasonic transducer/transmitter transducer (15) is cast, glued, welded, clipped, or screwed (36) onto the outer circumference of the fluid feeding device/filler tube (12) (figure 2; column 7, line 52).

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boscolo as applied to claim 10 above, and further in view of Keller (US Patent 6,629,457 B1 henceforth "Keller").

As to claim 1, Boscolo fails to disclose a fuel tank.

Keller teaches in a patent titled "Device for measuring a fill level of a liquid in a container", a fuel tank (1) of a motor vehicle (column 4, lines 5-9) with a measuring tube (5) and an ultrasonic sensor (8), wherein the ultrasonic sensor (8) transmits ultrasonic

signals into the measuring tube (5) and the reflected signals are used to determine the level of the fuel in the tank (1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Boscolo's liquid level sensing apparatus to be use it for sensing the level of fuel in Keller's fuel tank of a motor vehicle because both Boscolo and Keller use ultrasonic signals to detect the level of a fluid in a container.

As to claim 2, Boscolo teaches the ultrasonic transducer/transmitter transducer (15) is cast, glued, welded, clipped, or screwed (36) onto the outer circumference of the fluid feeding device/filler tube (12) (figure 2).

9. Claims 5, 7, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boscolo as applied to claim 1 above, in view of Keller and further in view of Cummings (US Patent 5,471,872 henceforth "Cummings").

As to claims 5 and 14, Boscolo fails to disclose that the sound guide conduit/filler tube (12) includes at least one bend with one deflection each and/or at least one straight region with a conduit slope angle.

Cummings teaches in a patent entitled "Acoustic liquid level measuring apparatus" a sound guide conduit/acoustic wave guides (20, 22), which include at least one bend with one deflection each and/or at least one straight region with a conduit slope angle (figure 1; column 2, lines 35-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Boscolo's liquid level sensing apparatus to include a sound guide conduit/filler tube (12) with at least one bend wit one deflection each and/or

at least one straight region with a conduit slope angle because by adding this feature the apparatus would be able to give a direct measurement of the liquid level.

As to claims 7 and 16, Boscolo fails to disclose that the sound guide conduit/filler tube (12) has at least two openings communicating with the interior of the fuel tank.

Cummings teaches a sound guide conduit/acoustic wave guide (22), which includes at least two openings/holes or orifices (48) communicating with the interior of the fuel tank/container (12) (figure 2; column 3, lines 34-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Boscolo's liquid level sensing apparatus to include a sound guide conduit/filler tube (12) with at least two openings communicating with the interior of the fuel tank because by adding this feature the apparatus would be able to compensate for pressure and equalization with the tank.

10. Claims 6, 9, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boscolo as applied to claim 1 above, in view of Keller and further in view of Shuler et al. (US Patent 4,090,407 henceforth "Shuler").

As to claims 6 and 15, Boscolo fails to disclose a sound guide conduit/filler tube (12) with at least one reference reflection surface.

Shuler teaches in a patent entitled "Water level measurement device" a sound guide conduit/tube (1), which comprises at least one reference reflection surface/insert (3) (figure 3; column 2, lines 49-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Boscolo's liquid level sensing apparatus to include a

sound guide conduit/filler tube (12), which comprises at least one reference reflection surface because by adding this feature the apparatus would be able to give a standard measurement of liquid level within the fuel tank/container.

As to claims 9 and 18, Boscolo fails to disclose an ultrasonic transducer/transmitter transducer (15) that is simultaneously a transmitter and a receiver.

Shuler teaches that it is known to use an ultrasonic transducer (2) that is simultaneously a transmitter and a receiver (claim 10; column 2, lines 41-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Boscolo's liquid level sensing apparatus to include an ultrasonic transducer that is simultaneously a transmitter and a receiver because by adding this feature the apparatus would be more compact with fewer components.

Allowable Subject Matter

11. Claims 3, 4 and 8 are allowed.

12. Claims 12, 13, 17, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Note as to claims 19 and 20, a fuel pumping device is known in the prior art to be used for pumping fuel into a fuel tank of a motor vehicle, but employing such a pumping device inside the container as a fluid feeding device is neither disclosed nor taught by the prior art.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 5,226,320 to Dages et al.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samir M. Shah whose telephone number is (571) 272-2671. The examiner can normally be reached on Monday-Friday 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Saul Sheh
SMS

3/29/2006

Hezron S. Williams
HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800